

## CASE REPORT

### A Case of Huge Pseudoaneurysm of the Gluteal Artery

P. Salcuni, M. Azzarone, M. Cento, M. Mazzei, M. S. De Giorgi and L. Pascarella

*Institute of General, Thoracic and Vascular Surgery, University of Parma, Italy*

*Aneurysms of the gluteal artery, true or false, are rare diseases which mostly occur after pelvic fractures or penetrating traumas. We report on a case of a 77-year-old woman who developed a 16 cm large right gluteal aneurysm. Echo-color-doppler, CT scan and angiography confirmed the clinical suspicion. The patient was successfully treated with endoaneursymorrhaphy, upon temporary clamping of the hypogastric artery using an extraperitoneal approach. In case of very large gluteal aneurysm we believe that open surgical treatment is still to prefer the endovascular procedure.*

**Key Words:** Aneurysm diagnosis; Gluteal aneurysm; Surgery; Pelvic traumas; Complications.

#### Introduction

Aneurysms and pseudoaneurysms of the gluteal artery are very rare. In the case reviews over the last years only very few cases have been recorded. We report on a case included in our observations for the rarity of the disease and for the extraordinary size of the aneurysmal sac.

#### Case Report

A 77-year-old woman, who had been receiving NSAIDs therapy for rheumatoid arthritis, was hospitalized because of a rapidly expanding swelling on the right buttock, which had been present for several months.

At the direct examination, the voluminous swelling appeared under pressure, filling and deforming the right gluteus. From the medical history a pelvic fracture, from a fall the patient had incurred 6 months before, was discovered.

The echo-color-doppler exam showed a swelling

with a low resistance to ultrasounds and presence of blood flow only in a restricted area.

The patient underwent a CT scan of the pelvis. This showed the outcomes of a comminute and unstable fracture of the right iliac wing, involving the sacroiliac joint, developing in pseudoarthrosis; a round and voluminous mass with a not homogeneous density of the soft parts (max diameter 16 cm) occupying the right gluteal region, on the same side as the fracture. The mass had clean and uniform margins, with a pseudocapsular appearance. After the contrast injection irregular haemorrhagic lacunes appeared inside the region. These lacunes were filled by the superior gluteal artery, which appeared dilated, probably aneurysmal, at the level of the old fracture. The outcome of the CT scan supported the diagnosis of gluteal pseudoaneurysm.

Subsequently, an arteriography was performed. The accumulation of contrast agent in correspondence of a posterior branch of the right hypogastric artery was evident. This branch, likely a gluteal artery, presented a wide dilation like a pseudoaneurysm.

Finally, it was decided to operate on the patient. She had spinal anesthesia and so was laid down on the left lateral decubitus. The internal iliac axis and all its branches were exposed using an extraperitoneal approach and encircled with double loop elastic tapes. An incision along the gluteal sulcus towards the trochanter was performed, creating a musculocutaneous flap. Through that incision the aneurysmal sac was

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Please address all correspondence to: Professor Matteo Azzarone, Istituto di Clinica Chirurgica Generale, Toracica E Vascolare, Ospedale Maggiore, Via Gramsci, 14 43100 Parma, Italy. Tel: +39 0521 991253; Fax: +39 0521 992019; E-mail: mizio100@tin.it or chirgtv@ipruniv.cce.unipr.it

dissected up to the ischiatic foramen. The resection of the sac and the evacuation of a voluminous thrombus allowed the afferent vessels, which were ligated with transfixion sutures.

Four days after the operation the patient was in good condition and the drains removed. On the seventh postoperative day she was discharged. The long-term result is good, without neurologic or wound remains.

### Discussion

Gluteal aneurysms are less than 1% of all aneurysms and are due mainly to contusions or penetrating traumas.<sup>1-2</sup> Generally, pelvic fractures cause an injury of the inferior gluteal artery (or of its branches), while penetrating traumas injure the superior gluteal artery. The lapse of time between trauma and diagnosis can vary, from a few weeks to several years. Very rarely, other causes are periarteritis nodosa,<sup>3</sup> myotic infections,<sup>4</sup> arterial dysplasia and the aneurysmal evolution of a persistent sciatic artery.<sup>5</sup>

The symptomatology can vary: gluteal throbbing and aching mass, aneurysm rupture, sciatic nerve compressive syndrome if the aneurysm is wide. The pulsation is inconstant, and so explains diagnostic mistakes (tumours, abscess).

The echo-color-doppler exam confirms the arterial nature of the mass, whereas the CT scan gives more information about the dimensions and the relationships of the aneurysmal sac. The angiography is still indispensable in order to identify, through the selective arteriography of the hypogastric artery, the involved branches.

The treatment of these lesions has been for a long time exclusively surgical. The standard procedure consists of the ligation of the hypogastric artery through the extra or transperitoneal approach, and subsequently of the gluteal incision in order to remove the aneurysm and to ligature the afferent vessels. As a second choice (the one we used), a temporary clamp of the hypogastric artery and its branches is performed, with subsequent removal of the aneurysmal sac and exclusion of the afferent vessels by endoaneurysmorrhaphy. It is important to point out that

the only ligation of the hypogastric artery from an anterior approach has been shown to be inappropriate. A direct approach is inadvisable because the dissection of the maximus and medium gluteus muscles is hard and can lead to a sciatic nerve injury, causing muscular necrosis and the difficult control of haemorrhagy.

Over recent years several authors have reported good results in the use of the embolization of the small aneurysms. This technique requests a selective catheterism of the hypogastric artery and the identification of all the afferent branches. Then the embolization is performed, using different materials, in order to achieve the complete thrombosis of the aneurysmal sac. This manoeuvre is more difficult for large aneurysms and could be considered only for reducing the haemorrhagic risk when a surgical operation is needed, owing to the dimension.<sup>6</sup>

### Conclusions

Even if rare, gluteal aneurysms must be considered every time a gluteal mass is evident. The clinical suspicion is confirmed, first of all, by the echo-color-doppler, and then by CT scan and arteriography.

We believe that surgical treatment is still the best for large aneurysm, whereas embolization should be the favoured technique for the small ones.

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